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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,290	01/14/2005	Suzanne Van Egmond	NL 020637	8577

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EXAMINER	
LIE, ANGELA M	
ART UNIT	**PAPER NUMBER**
2163	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,290	VAN EGMOND, SUZANNE	
	Examiner	Art Unit	
	ANGELA M. LIE	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of claims

1. Claims 1-9 are currently pending.

2. Claims 1-5 have been amended.

3. Claims 6-9 are newly added.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giannopulos et al (US Patent 6160361), hereafter referred to as Giannopulos, in view of Shannon et al (US Publication No. 2006/0007719), hereafter referred to as Shannon.

As to claim 1, Giannopoulos teaches an apparatus performing a method comprising the steps of: applying an amplitude modulated control current (Figure 2, element 107; column 1, lines 54-55; wherein the current level corresponds to current amplitude) to a discharge lamp (Figure 1, element 25), detecting highest value of the lamp voltage during a rising edge of an envelope of the modulated control current (column 1, lines 50-59), and comparing the detected highest value with previously recorded peak values for different lamp types (column 1, lines 62-64; wherein the data has to be stored in order to be compared later on, because otherwise such a

comparison would not be possible), and assigning the detected peak value to a lamp on the basis of the comparison (column 1, lines 62-64).

However Giannopoulos does not explicitly teach that amplitude modulated control current applied to a discharge lamp is periodic.

On the other hand Shannon teaches method and apparatus for controlling a discharge lamp in a backlighted display wherein current supplied to a discharge lamp is periodic (as shown in figures 11A-11D) and further wherein the relation between voltage and current can be measured and analyzed (Figures 15A-15M, i.e. finding the relation between voltage and current, as well as identifying pick (highest) values).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide periodic current to ignite a discharge lamp (for instance cold cathode fluorescent lamp (CCFL)) as taught by Shannon, in Giannopoulos measurement system, as it is a common way of exciting the charge within a CCFL bulb to the point where the glowing discharge is generated.

Moreover since Giannopoulos teaches a system wherein plurality of lamps are compared, it would be also highly desirable to provide an option for comparing wide range of data (i.e. not only at steady state) related to discharge lamps. The method taught by Giannopoulos discusses conducting multiple comparisons of I-V characteristics, however one of ordinary skill in the art could realize that the method taught therein can be applied to different variety of bulbs under different operating conditions.

As to claim 2, Giannopoulos teaches a device comprising: means for supplying a control current (Figure 2, elements 101 and 107) to a discharge lamp (Figure 1, element 25), is characterized by the presence of means for amplitude-modulating the control current to the lamp (column 1, lines 54-55, wherein current level corresponds to current amplitude), peak detection means for detecting the peak voltage across the lamp at a rising edge of the envelope of the envelope of the amplitude-modulated control current (column 1, lines 51-59), recording means for recording peak voltages associated with lamp types (Figure 1, elements 49 and 42) and means for comparing the measured peak voltage with the recorded peak voltages and supplying a lamp type-indicating signal on the basis of the comparison (column 1, lines 62-67, and column 2, lines 1-7).

As to claim 3, Giannopoulos teaches a device wherein the means for supplying a control current to the lamp are formed by a source of comparatively high-frequency square wave voltage supplying (column 2, line 57), via a series-resonance chain (column 2, lines 58-59), a corresponding control current to the lamp (Figure 1, element 25), characterized in that means are present for square-wave frequency modulating the comparatively high-frequency square-wave voltage (column 2, lines 57-58).

As to claim 4, Giannopoulos teaches a device wherein the means for supplying a control current to the lamp are formed by a source of comparatively high-frequency square wave voltage supplying (column 2, line 57), via a series-resonance chain (column 2, lines 58-59), a corresponding control current to the lamp (Figure 1, element

25), characterized in that means are present for square-wave pulse width modulating the comparatively high-frequency square-wave voltage (column 2, lines 57-58).

As to claim 6, Giannopoulos teaches a device for performing a method comprising the steps of: applying an amplitude modulated control current (Figure 2, element 107; column 1, lines 54-55; wherein the current level corresponds to current amplitude) to a discharge lamp (Figure 1, element 25), detecting highest value of the lamp voltage during a rising edge of an envelope of the modulated control current (column 1, lines 50-59), and comparing the detected highest value with previously recorded peak values for different lamp types (column 1, lines 62-64; wherein the data has to be stored in order to be compared later on, because otherwise such a comparison would not be possible), and assigning the detected peak value to a lamp on the basis of the comparison (column 1, lines 62-64).

However, Giannopoulos does not explicitly teach that square-wave modulates a DC voltage to produce a square-wave modulating voltage, wherein a periodically changing control current is produced from the square-wave modulating voltage, and finally step of applying a periodically changing control current to a discharge lamp.

On the other hand, Shannon teaches a discharge lamp control system comprising a DC to AC inverter wherein DC voltage is modulated as to form a square wave-form (Figure 11A). Then in response to the voltage, an AC control current is produced (Figure 11B) which then can be supplied to a lamp.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide periodic current to ignite a discharge lamp (for instance

cold cathode fluorescent lamp (CCFL)) and then analyze I-V characteristics, as taught by Shannon, in Giannopoulos measurement system in order to collect data under many different operating conditions (i.e. not only steady state), what in fact would allow to ascertain a type of a lamp more precisely. Furthermore in order to create the AC supply current from the DC source, frequently a “train pulse” (i.e. square wave) is applied to DC voltage in order to produce alternating signal (note that Giannopoulos also teaches the train wave modulated voltage (column 2, lines 54-64)). Subsequently periodically changing control current can be produced from the square wave. The practice described above would have been obvious to one of the ordinary skill in the art at the time the invention was made as it is standard and well known method adapted by inverters.

6. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gainnopoulos and Shannon in view of Alexandrov (US Publication 2004/0124785).**

Giannopoulos and Shannon teach a device as claimed in claim 2, wherein the means for supplying a control current to the lamp are formed by a source of a comparatively high-frequency square-wave voltage supplying (column 2, lines 57-61), via a series-resonance chain (column 2, line 59), a corresponding control current to the lamp (column 1, line 54). Furthermore, Giannopoulos also teaches means for square-wave amplitude modulating the direct voltage supplied to the source of a comparatively high-frequency square-wave voltage (column 2, lines 57-58, and column 1, lines 54-55) Gainnopoulos, however does not teach that the source of comparatively high-frequency square wave voltage is fed with a direct voltage from an AC/DC converter. Alexandrov

teaches an apparatus for arc detection in discharge lamp wherein the circuitry comprises AC/DC converter (Figure 2, element AC/DC converter). It would have been obvious to one of the ordinary skill in the art during the time the invention was made to incorporate AC/DC converter as taught by Alexandrov into the apparatus taught by Giannopoulos, because as shown in Giannopoulos's circuit the input starts from the DC source (Figure 1, element 13), and it is well know in the art that the standard house outlet supplies AC signal (http://www.school-for-champions.com/science/acwiring.htm), so that in order to make it possible for the user to use the apparatus at home if needed, it would be beneficiary to include AC/DC converter. It would be a very convenient solution since a user would not need to use an additional converter. Furthermore it would provide AC/DC converter along with the apparatus would prevent from possible damage to the equipment caused by the user connecting wrong AC/DC converter with the apparatus.

7. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gainnopoulos and Shannon in view of Hirakata et al (US Publication 2004/0051692), hereafter referred to as Hirakata.

Gainnopoulos and Shannon teaches the device and method as disclosed in claims 1, 2 and 6, however they do not explicitly teach the act of producing the periodically changing control current comprises an act of producing a periodically changing control current formed as a step-like current decrease that precedes a step-like current increase. On the other hand Hirakata teaches a lighting device wherein input current originates from the square pulse, and further wherein the current waveform

is periodic with step-like changes in amplitude (Figure 4(b), in the period t2 the current first has step-down and then step-up).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate step down and step up fluctuations into current amplitude as taught by Hirakata, in modified Gainnopoilos's measurement system, in order to gather more accurate hence more complete data on how lamp voltage behaves in response to different amplitudes of control current. This additional data would be helpful in identifying a type of lamp that is being tested.

Response to Arguments

8. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new grounds of rejection.

The Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- WO 00/07415 discloses ballast for operating different types of lamp loads through the identification of the lamp.

Inquiry

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA M. LIE whose telephone number is (571)272-8445. The examiner can normally be reached on M-F.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung T Vy/
Primary Examiner, Art Unit 2163

/Angela M Lie/
Examiner, Art Unit 2163